# Blocking immune molecule reduces tumor growth, prolongs survival of most aggressive childhood cancer in animal models

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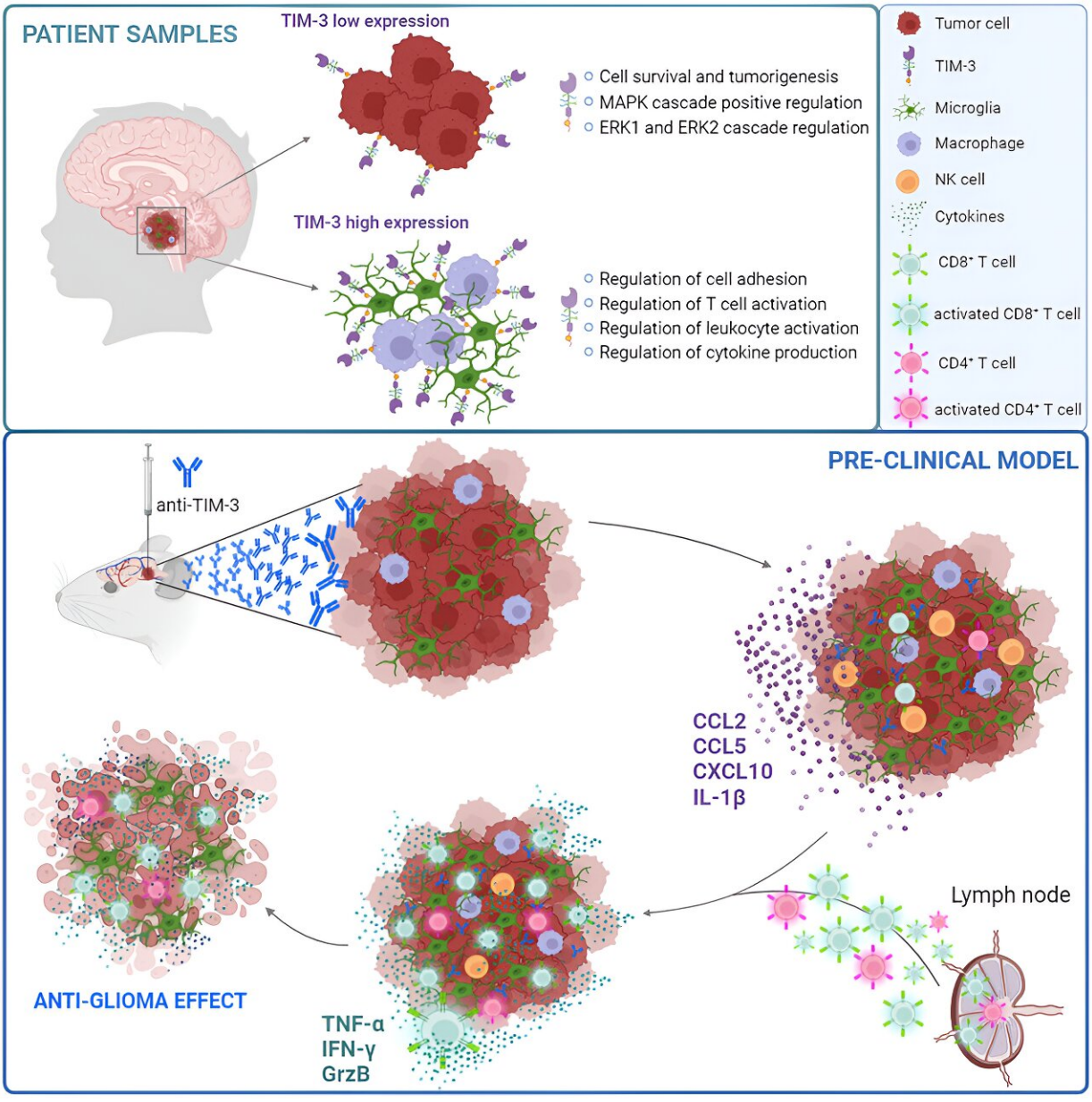

Credit: *Cancer Cell* (2023). DOI: 10.1016/j.ccell.2023.09.001

Researchers have confirmed that blocking an immune checkpoint molecule reduces tumor size and prolongs survival in animal models of the most aggressive childhood cancer. This study, carried out by researchers from Cima and the Clínica Universidad de Navarra, together with the international cooperative group Diffuse Midline Glioma (DMG-ACT), shows that inhibition of TIM-3 promotes the immune memory of diffuse intrinsic stem glioma (DIPG) and improves the prognosis of the disease.

The findings are published in the journal *Cancer Cell*.

DIPG is an aggressive brain stem tumor and the leading cause of death related to pediatric cancer. Due to its location therapeutic options are limited, so it is essential to study effective treatments.

"In recent years, immunotherapy has proven to be an alternative for many types of cancer. In particular, immune checkpoint inhibitors (key regulators of the immune system) have shown good results in various solid tumors. But due to the unique tumor microenvironment of DIPGs, classical inhibitors have not been effective in these pediatric patients," explains Iker Ausejo-Mauleon, predoctoral researcher at the Cima Cancer Division and first author of the paper.

## Antitumor immune response

Recently, the presence of the TIM-3 checkpoint in tumor cells has been linked to the proliferation and metastatic capacity of different types of

cancer. "In this study, we show that TIM-3 is also highly expressed in both tumor cells and cells in the DIPG microenvironment," explains Dr. Marta Alonso, co-director of the Cima Solid Tumor Program and director of the study.

The next step was to block this molecule and the researchers found that its inhibition promotes a proinflammatory tumor microenvironment that favors a potent antitumor immune response.

"As a consequence, long-term survival of experimental models is increased. Therefore, TIM-3 is presented as a therapeutic target that can guide the development of clinical trials for these patients," say the researchers.

**More information:** Iker Ausejo-Mauleon et al, TIM-3 blockade in diffuse intrinsic pontine glioma models promotes tumor regression and antitumor immune memory, *Cancer Cell* (2023). DOI: 10.1016/j.ccell.2023.09.001

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